Claims:

1. A method of expanding tubing, the method comprising:
locating an expansion device in tubing to be expanded;
vibrating at least one of the tubing and the expansion device; and
translating the expansion device relative to the tubing.

2. The method of claim 1, wherein the nature of the vibration of at least one of the tubing and the expansion device is selected to reduce friction between the tubing and the device.

3. The method of claim 2, wherein the vibration of at least one of the expansion device and the tubing is selected to substantially avoid static friction between contacting surfaces of the expansion device and the tubing.

4. The method of claim 1, wherein a driving force is applied to translate the expansion device through the tubing.

5. The method of claim 4, wherein the driving force remains substantially constant as the expansion device is translated through the tubing.

6. The method of claim 1, wherein the direction of the vibration includes an element selected from at least one of: random, multi-directional, axial, transverse and rotational.

7. The method of claim 1, wherein at least a major portion of the expansion device is subject to vibration.

8. The method of claim 1, wherein only a selected portion of the expansion device is subject to vibration.

9. The method of claim 8, wherein a surface portion of the device is subject to vibration.

10. The method of claim 1, wherein portions of the expansion device experience different forms of vibration.

11. The method of claim 1, wherein at least a substantial portion of the tubing is vibrated.

12. The method of claim 1, wherein only a selected portion of the tubing is vibrated.

13. The method of claim 12, wherein a portion of the tubing adjacent the expansion device is vibrated.

14. The method of claim 12, wherein a surface portion of the tubing is vibrated.

15. The method of claim1, wherein the vibration induces physical movement of at least one of the expansion device and tubing.

16. The method of claim 1, wherein the vibration induces contraction and expansion of at least a portion of at least one of the expansion device and the tubing.

17. The method of claim 1, wherein the vibration takes the form of at least one wave traveling through at least one of the expansion device and the tubing.

18. The method of claim 1, wherein the vibration is created locally relative to the tubing being expanded.

19. The method of claim 1, wherein the vibration is created remotely of a tubing expansion location, and travels to the expansion location.

20. The method of claim 1, comprising creating the vibration with a moving mass.

21. The method of claim 1, comprising creating the vibration by providing a varying restriction to fluid flowing through at least one of the expansion device and the tubing.

22. The method of claim 1, comprising creating the vibration with an electromagnetic oscillator.

23. The method of claim 1, comprising creating the vibration by varying the pressure of fluid operatively associated with at least one of the device and the tubing.

24. The method of claim 1, comprising creating the vibration by creating pressure pulses in a fluid operatively associated with at least one of the device and the tubing.

25. The method of claim 1, comprising creating the vibration by injecting fluid into fluid operatively associated with at least one of the device and the tubing.

26. The method of claim 1, comprising coupling a source of vibration to at least one of the expansion device and the tubing.

27. The method of claim 26, comprising directly coupling a source of vibration to at least one of the expansion device and the tubing.

28. The method of claim 26, comprising indirectly coupling a source of vibration to at least one of the expansion device and the tubing.

29. The method of claim 1, wherein the amplitude of the vibration is selected from at least one of constant, varying and random amplitude.

30. The method of claim 1, wherein the frequency of the vibration is selected from at least one of constant, varying and random frequency.

31. The method of claim 1, wherein the form of the vibration is selected from at least one of constant, varying and random form.

32. The method of claim 1, wherein the vibration is of high frequency.

33. The method of claim 32, wherein the vibration is ultrasonic.

34. The method of claim 1, wherein the form of the vibration is selected such that the vibration is not apparent as physical movement.

35. The method of claim 1, wherein the vibration is induced electromagnetically.

36. The method of claim 1, wherein the vibration is of relatively low frequency.

37. The method of claim 36, wherein the vibration is in the range of 1 to 100 Hz.

38. The method of claim 1, wherein the vibration comprises a plurality of different components.

39. The method of claim 38, wherein the vibration comprises a low frequency component and a high frequency component.

40. The method of claim 1, wherein the vibration is selected to coincide with a natural frequency of at least one of the expansion device and the tubing.

41. The method of claim 1, wherein the vibration is selected to avoid a natural frequency of at least one of the expansion device and the tubing.

42. The method of claim 1, comprising applying a driving force to the expansion device to translate the expansion device relative to the tubing.

43. The method of claim 1, comprising applying a mechanical driving force to translate the expansion device relative to the tubing.

44. The method of claim 43, wherein the driving force comprises at least one of a pulling, pushing and torsional force.

45. The method of claim 1, comprising applying a fluid pressure driving force to translate the expansion device relative to the tubing.

46. The method of claim 1, wherein the expansion device is in sliding contact with the tubing.

47. The method of claim 1, wherein the expansion device is in rolling contact with the tubing.

48. The method of claim 1, wherein the expansion device is translated axially relative to the tubing.

49. The method of claim 1, wherein the expansion device is translated rotationally relative to the tubing.

50. The method of claim 1, comprising expanding the tubing by creating localized compressive yield in the tubing wall.

51. The method of claim 1, comprising varying the diameter of the expansion device.

52. The method of claim 1, further comprising creating a pressure differential across a wall of the tubing.

53. The method of claim 52, wherein the pressure differential applied across the tubing wall is varied.

54. The method of claim 53, wherein the pressure differential is cycled.

55. The method of claim 1, comprising isolating a volume of fluid containing the expansion device.

56. A method of expanding tubing, the method comprising:
locating an expansion device in tubing to be expanded;
vibrating the expansion device; and
translating the expansion device relative to the tubing.

57. Apparatus for expanding tubing, the apparatus comprising:
an expansion device; and
means for vibrating at least one of the tubing and the expansion device.

58. The apparatus of claim 57, further comprising means for translating the expansion device relative to the tubing.

59. The apparatus of claim 57, wherein the vibrating means is operable to reduce friction between the tubing and the expansion device.

60. The apparatus of claim 57, wherein the vibrating means is operable to avoid static friction between contacting surfaces of the tubing and the expansion device.

61. The apparatus of claim 57, wherein the vibrating means is operable to vibrate at least a major portion of at least one of the device and the tubing.

62. The apparatus of claim 57, wherein the vibrating means is operable to vibrate a selected portion of at least one of the expansion device and the tubing.

63. The apparatus of claim 57, wherein the vibrating means comprises at least one of: a movable mass; a variable fluid flow path through at least one of the expansion device and tubing; an electromagnetic oscillator; means for varying the pressure of fluid operatively associated with at least one of the device and tubing; means for creating pressure pulses in a fluid; and means for injecting a fluid into fluid operatively associated with at least one of the expansion device and the tubing.

64. The apparatus of claim 57, wherein the vibrating means is directly coupled to at least one of the expansion device and the tubing.

65. The apparatus of claim 57, wherein the vibrating means is indirectly coupled to at least one of the expansion device and the tubing.

66. The apparatus of claim 57, wherein the expansion device comprises an expansion cone.

67. The apparatus of claim 66, wherein the expansion cone is adapted for sliding contact with the tubing.

68. The apparatus of claim 66, wherein the expansion cone is adapted for rolling contact with the tubing.

69. The apparatus of claim 57, wherein the expansion device comprises a rotary expander.

70. The apparatus of claim 57, wherein the expansion device defines a fixed expansion diameter.

71. The apparatus of claim 57, wherein the expansion device comprises a variable expansion diameter.

72. The apparatus of claim 57, wherein the expansion device is compliant.

73. The apparatus of claim 57, further comprising means for creating a pressure differential across a tubing wall adjacent the expansion device.

74. The apparatus of claim 57, further comprising means for creating a varying pressure differential across a tubing wall adjacent the expansion device.

75. The apparatus of claim 57, comprising means for isolating a volume of fluid containing the expansion device.

76. The apparatus of claim 75, wherein said isolating means comprises at least one seal.

77. The apparatus of claim 76, where the seal comprises a plurality of seal members.

78. The apparatus of claim 76 or 77, wherein said seal is adapted to permit a degree of leakage thereacross.

79. Apparatus for expanding tubing, the apparatus comprising:
an expansion device; and
means for vibrating the expansion device.

80. Apparatus for expanding tubing, the apparatus comprising:
an expansion device; and
a vibration inducing device operatively associated with at least one of the tubing and the expansion device.

81. Apparatus for expanding tubing, the apparatus comprising:

an expansion device; and

a vibration inducing device operatively associated with the expansion device.